

# **CBO's Role in the Federal Budget Process and Its Work Assessing Climate Change and Related Policies**

June 6, 2023

Presentation to the  
American Meteorological Society's Summer Policy Colloquium

Nicholas Chase  
Microeconomic Studies Division

# **CBO Was Created by the Congressional Budget and Impoundment Control Act of 1974**

## **CBO's Role**

CBO was established to give the Congress a stronger role in budget matters.

The agency provides objective and impartial analyses of budgetary and economic issues. It is strictly nonpartisan and does not make policy recommendations.

CBO follows processes that are specified in law or that it has developed in concert with the budget committees and Congressional leadership. CBO's chief responsibility under its authorizing legislation is to help the budget committees with the matters under their jurisdiction.

# CBO's Organization

The agency's Director is appointed jointly by the Speaker of the House and the president pro tempore of the Senate for a four-year term, which may be renewed or extended.

CBO has about 275 employees. They are hired solely on the basis of professional competence, without regard to political affiliation. Most have advanced degrees.

CBO's organization consists of the Office of the Director and nine divisions:

- Budget Analysis
- Financial Analysis
- Health Analysis
- Labor, Income Security, and Long-Term Analysis
- Macroeconomic Analysis
- Management, Business, and Information Services
- Microeconomic Studies
- National Security
- Tax Analysis

# **CBO Provides Budgetary and Economic Analyses to Support the Congressional Budget Process**

# CBO Provides Baseline Budget and Economic Projections

CBO prepares, and periodically updates, a 10-year budget baseline that serves as a benchmark for measuring the effects of proposed legislation.

The baseline incorporates the assumption that current laws governing spending and revenues generally remain unchanged, and it relies on CBO's forecasts of key economic factors.

Table 1-1.

## CBO's Baseline Budget Projections, by Category

													Total	
	Actual, 2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2024– 2028	2024– 2033
In Billions of Dollars														
Revenues														
Individual income taxes	2,632	2,523	2,467	2,511	2,764	3,018	3,121	3,246	3,377	3,515	3,650	3,803	13,881	31,472
Payroll taxes	1,484	1,562	1,633	1,703	1,778	1,849	1,920	1,993	2,068	2,147	2,226	2,307	8,884	19,625
Corporate income taxes	425	475	479	489	495	494	506	514	520	527	527	539	2,462	5,089
Other <sup>a</sup>	356	251	260	264	273	293	369	386	398	414	435	449	1,459	3,540
Total	4,896	4,812	4,838	4,966	5,310	5,655	5,916	6,139	6,364	6,603	6,838	7,098	26,686	59,727
On-budget	3,830	3,678	3,643	3,711	3,999	4,292	4,501	4,671	4,842	5,023	5,200	5,402	20,145	45,284
Off-budget <sup>b</sup>	1,066	1,133	1,196	1,255	1,311	1,363	1,415	1,468	1,522	1,580	1,637	1,695	6,540	14,443
Outlays														
Mandatory	4,135	3,840	3,812	3,995	4,193	4,395	4,731	4,756	5,115	5,391	5,665	6,140	21,125	48,192
Discretionary	1,662	1,741	1,864	1,955	2,005	2,063	2,119	2,159	2,215	2,266	2,319	2,380	10,007	21,347
Net interest	475	640	739	769	828	903	995	1,071	1,149	1,236	1,333	1,429	4,232	10,451
Total	6,272	6,221	6,415	6,719	7,026	7,361	7,845	7,986	8,479	8,894	9,317	9,948	35,365	79,990
On-budget	5,188	5,011	5,091	5,297	5,521	5,771	6,163	6,215	6,602	6,908	7,215	7,737	27,843	62,520
Off-budget <sup>b</sup>	1,084	1,210	1,324	1,421	1,504	1,590	1,682	1,771	1,877	1,986	2,102	2,211	7,521	17,470
Total Deficit	-1,375	-1,410	-1,576	-1,752	-1,716	-1,706	-1,929	-1,847	-2,115	-2,291	-2,480	-2,851	-8,679	-20,263
On-budget	-1,358	-1,333	-1,448	-1,586	-1,523	-1,479	-1,662	-1,544	-1,760	-1,885	-2,015	-2,335	-7,698	-17,236
Off-budget <sup>b</sup>	-18	-77	-129	-166	-193	-227	-266	-303	-355	-407	-465	-516	-981	-3,027
Primary Deficit <sup>c</sup>	-900	-770	-838	-984	-888	-804	-934	-776	-966	-1,055	-1,146	-1,422	-4,447	-9,812
Debt Held by the Public	24,257	25,716	27,370	29,214	30,927	32,645	34,642	36,406	38,604	40,945	43,482	46,445	n.a.	n.a.

# CBO Prepares Estimates of the Effects of Legislative Proposals

CBO is required to produce a formal cost estimate for nearly every bill approved by a full committee. The agency usually produces 600 to 800 cost estimates each year.

Those estimates include the impact of federal mandates on state, local, and tribal governments.

CBO also fulfills thousands of requests for technical assistance as lawmakers draft legislation.

Furthermore, CBO tracks appropriation actions.

H.R. 3304, Advancing Uniform Transportation Opportunities for Veterans Act			
As ordered reported by the House Committee on Veterans' Affairs on September 21, 2022			
By Fiscal Year, Millions of Dollars	2022	2022-2027	2022-2032
Direct Spending (Outlays)	0	167	-43
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	167	-43
Spending Subject to Appropriation (Outlays)	0	0	0
Statutory pay-as-you-go procedures apply?	Yes	Mandate Effects	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2032?	< \$5 billion	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

# CBO Publishes About 70 Reports, Testimonies, and Working Papers Each Year

CBO's reports cover every major area of federal policy, including spending programs, the tax code, and budgetary and economic challenges.

The reports often present options for changes to the federal program or tax rules under consideration, but they make no recommendations.





**CBO Prioritizes Objectivity,  
Analytical Soundness, Responsiveness,  
Transparency, and Accessibility**

# **CBO's Analysis Is Objective, Impartial, and Nonpartisan**

CBO hires people on the basis of their expertise without regard to political affiliation. The agency carefully considers whether potential analysts can perform objective analysis, regardless of their own personal views.

The agency uses a common set of assumptions when analyzing different legislative proposals to ensure that its estimates are consistent and impartial.

CBO's estimates are inherently uncertain, but its goal is to produce estimates that are in the middle of the distribution of likely outcomes.

The agency solicits input from a range of experts through its external review process as well as through its panel of economic advisers and panel of health advisers.

# CBO Makes Its Work Transparent in Different Ways

- Testifying and publishing answers to questions
- Explaining analytic methods and models
- Releasing data and underlying code
- Analyzing the accuracy of its estimates
- Comparing its current estimates with previous ones
- Comparing its estimates with those of other organizations
- Estimating the effects of policy alternatives
- Characterizing uncertainty surrounding estimates
- Creating data visualizations
- Conducting outreach

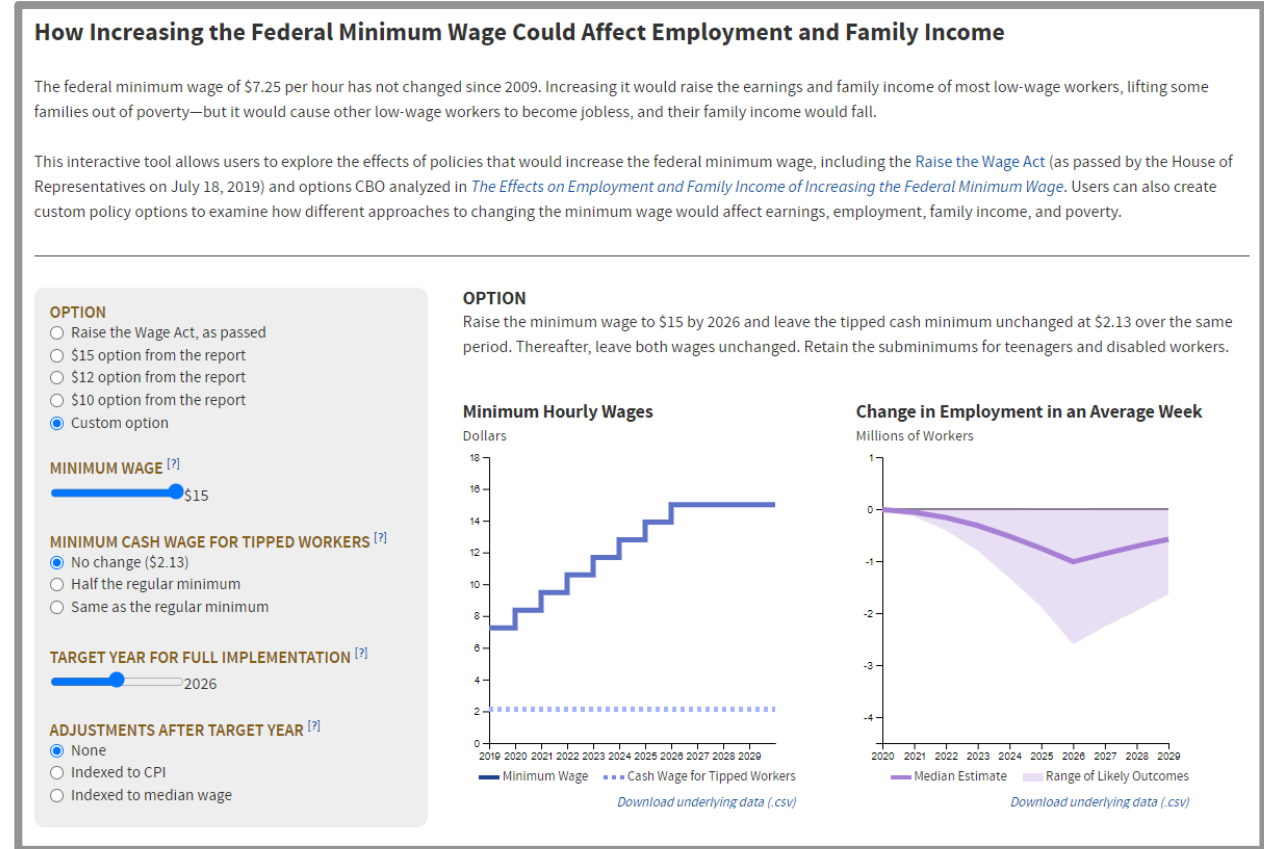
# CBO's Products Are Accessible

All of CBO's reports and formal cost estimates are shared widely and made available on the agency's website.

CBO publishes interactive graphics, including graphics accompanying reports that make key takeaways more easily accessible.

CBO produces versions of its reports that are tailored for reading on mobile devices and web browsers.

CBO publishes its reports in two formats: PDF and HTML.



# **CBO's Work on the Effects of Climate Change and Climate Change Policy on the Federal Budget**

# Budgetary Effects of Climate Change and Efforts to Address It



Climate change results in physical effects that reduce economic output.

Potential consequences exist for revenues, mandatory spending, and discretionary spending.

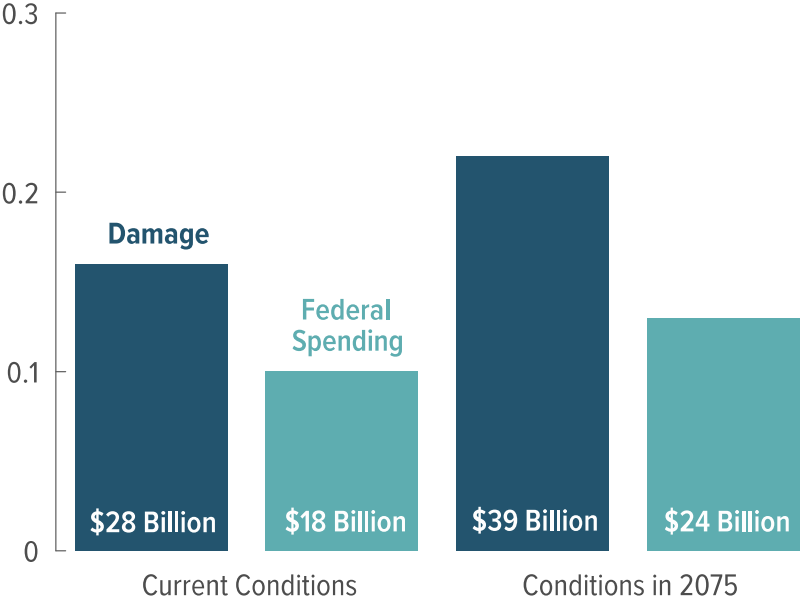
Adaptation and mitigation could reduce physical and budgetary effects.

# **Effects of Climate Change**

# Estimates of Hurricane Damage

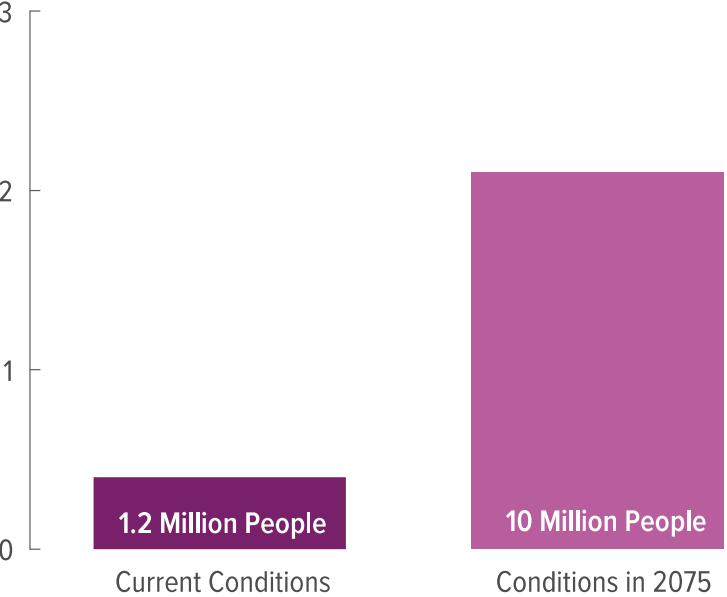
**Expected Hurricane Damage and Related Federal Spending**

Percentage of Gross Domestic Product  
(Also shown in dollars based on today's economy)



**Percentage of the U.S. Population Living in Counties With Substantial Hurricane Damage**

Percentage of U.S. Population



The cost of hurricane damage is expected to increase more than the economy will grow.

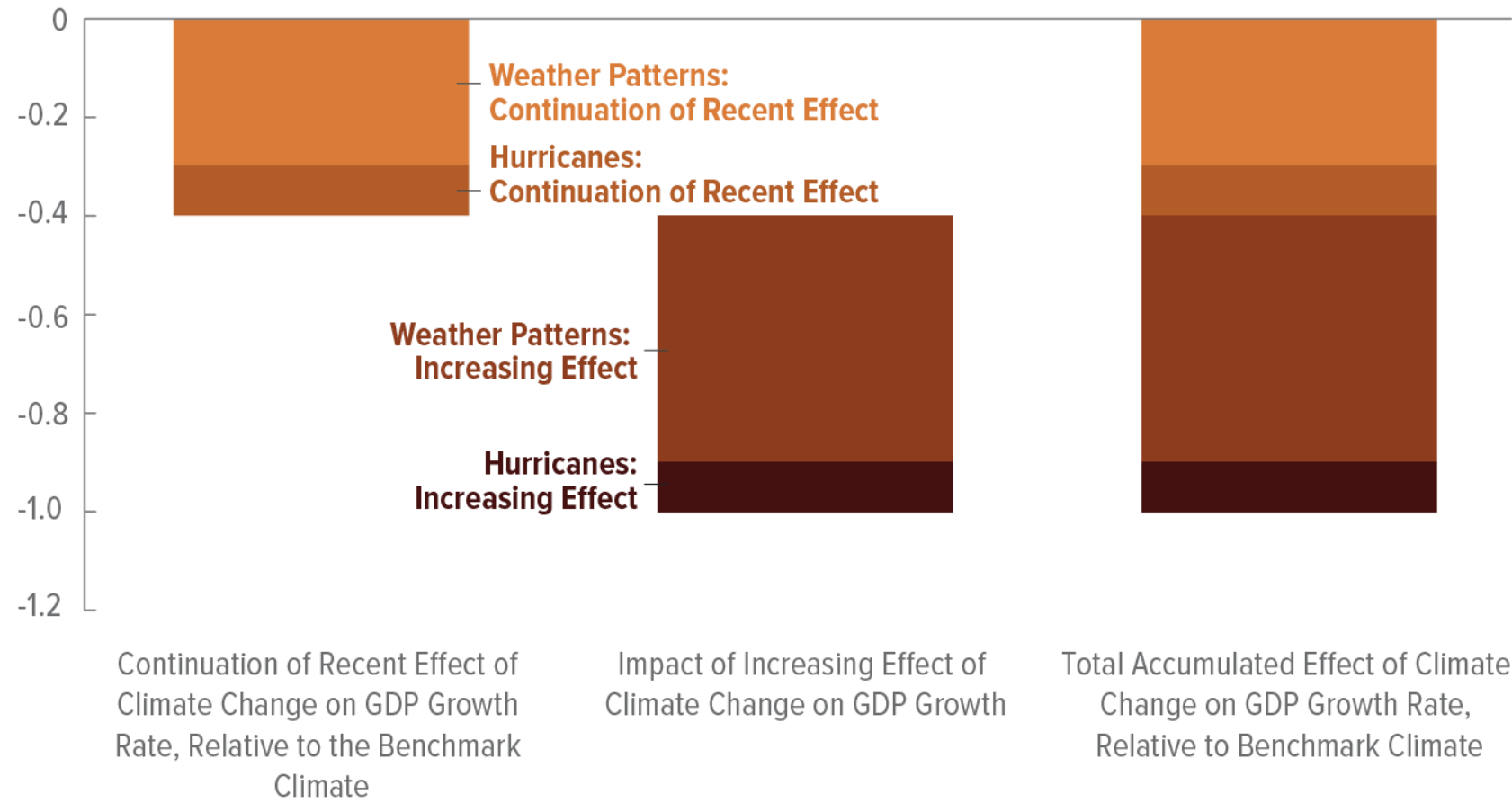
Expected annual damage in 2016 was 0.16 percent of gross domestic product (GDP).

Expected annual damage in 2075 is 0.22 percent of GDP.



# How Climate Change Is Expected to Change the Level of Real Gross Domestic Product in 2050

Percentage of Real GDP



Climate change will reduce the growth rate of real GDP from 2020 to 2050 by an average of 0.03 percentage points.

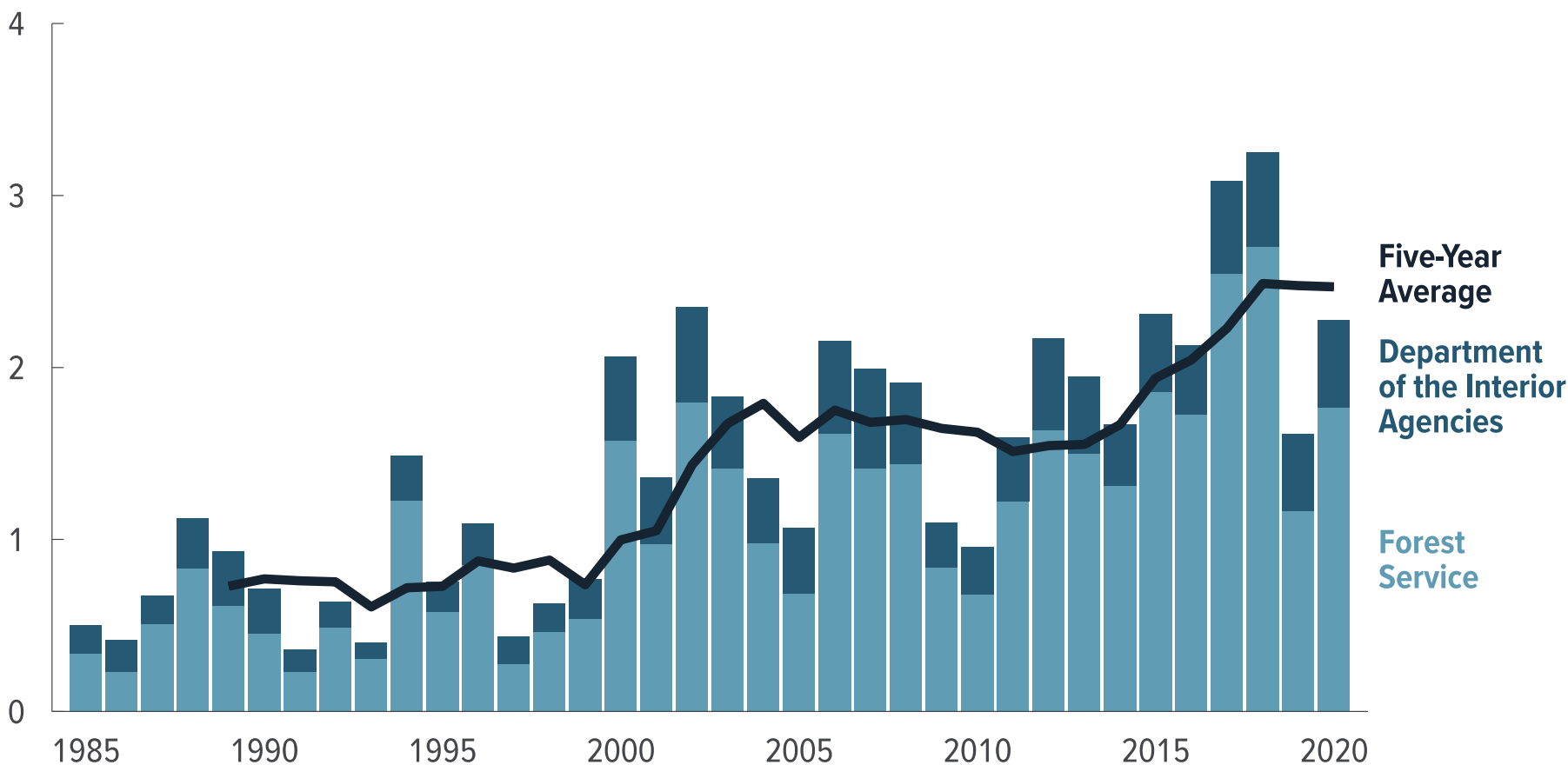
That difference in annual growth accumulates to a 1.0 percent reduction in the projected level of real GDP in 2050.

Climate change will have effects on people's well-being that are not measured in GDP.

# How Wildfires Affect the Federal Budget

## Spending on Wildfire Suppression by the U.S. Forest Service and Department of the Interior

Billions of 2020 Dollars



Wildfires affect the federal budget through spending on fire suppression, forest management, disaster assistance, and other activities.

The five-year moving average for federal spending on wildfire suppression has tripled in recent years.

Climate change has created hotter and drier conditions that are conducive to longer and more severe wildfire seasons.

# **Effects of Policies That Would Address Climate Change**

# How a Tax on Greenhouse Gas Emissions Would Affect the Federal Budget

Billions of Dollars	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
											2023–2027	2023–2032
Decrease (-) in the Deficit												
Apply a \$25 tax per metric ton of emissions and increase tax annually by 5 percent, adjusted for inflation	-55.2	-86.2	-83.5	-82.4	-81.8	-81.3	-87.3	-95.4	-102.9	-109.5	-389.0	-865.4
Apply a \$25 tax per metric ton of emissions and increase tax annually by 2 percent, adjusted for inflation	-55.2	-84.7	-80.4	-77.3	-74.9	-72.2	-75.0	-79.6	-83.4	-86.2	-372.5	-768.9
Apply a \$25 tax per metric ton of emissions (excluding gasoline) and increase tax annually by 2 percent, adjusted for inflation	-43.3	-65.9	-61.0	-57.4	-54.6	-51.6	-54.0	-58.1	-61.5	-63.7	-282.1	-570.9

Data sources: Staff of the Joint Committee on Taxation; Congressional Budget Office.

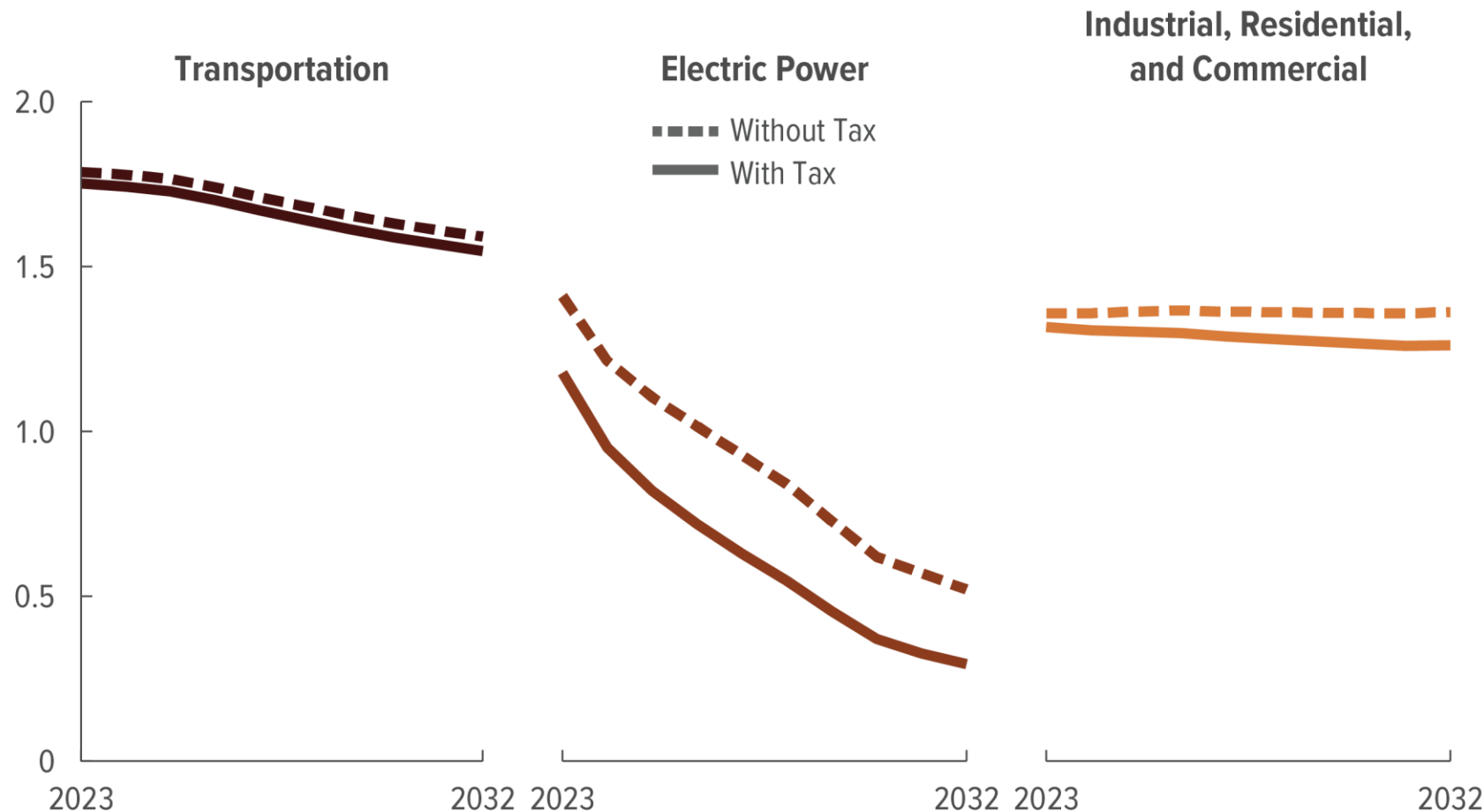
This option would take effect in January 2023.

An offset to reflect reduced income and payroll taxes has been applied to the estimates in this table.

# How a Tax on Greenhouse Gas Emissions Would Reduce Emissions

Estimated Effects of a \$25-per-Ton Tax on Energy-Related Emissions of Carbon Dioxide That Grows at an Inflation-Adjusted Annual Rate of 5 percent, by Economic Sector

Billions of Metric Tons

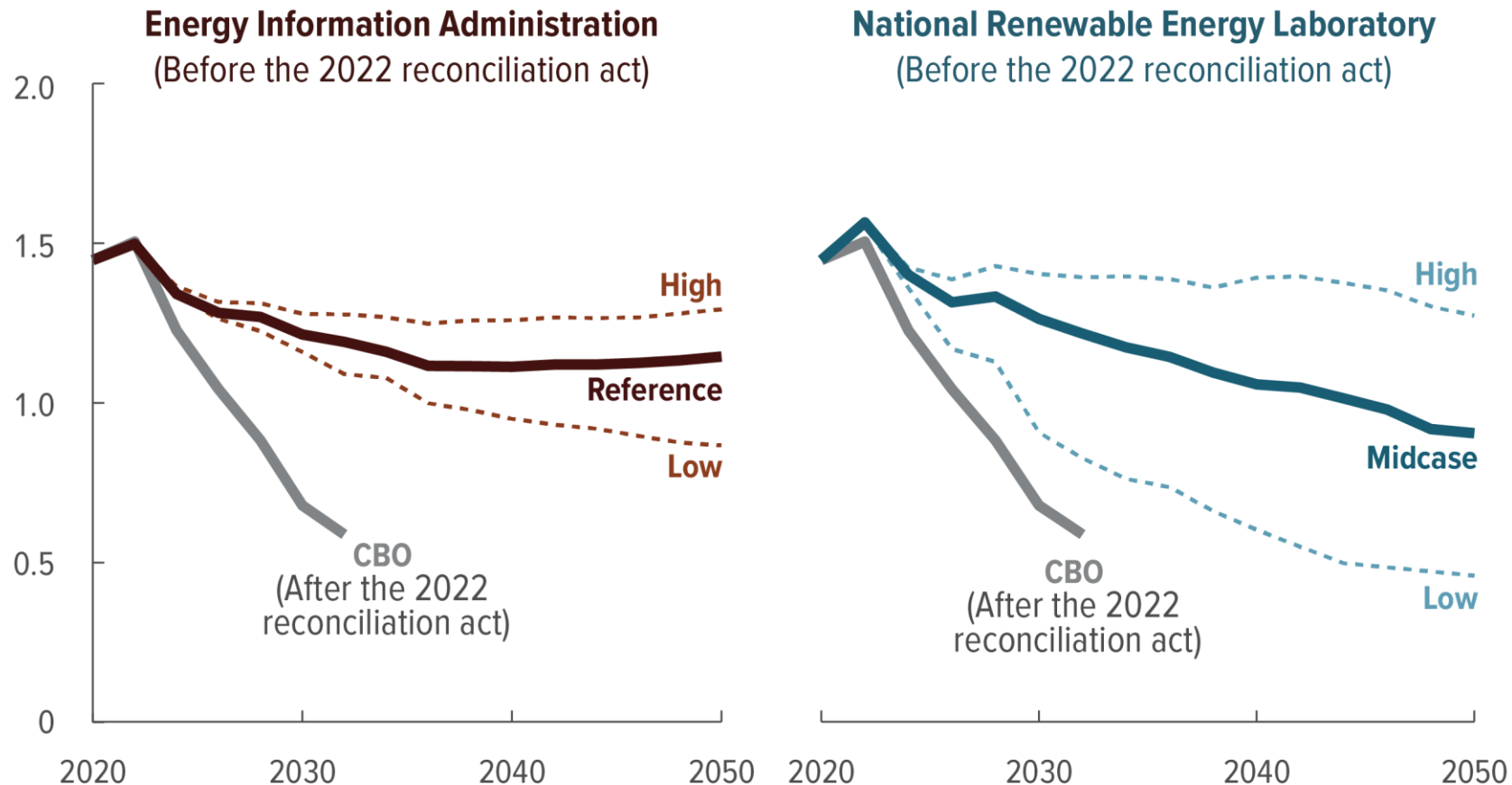


The electric power sector is the most responsive sector to a tax on greenhouse gas emissions.

That sector has more opportunities for switching to less carbon-intensive fuels than do the other sectors.

# Projected Carbon Dioxide Emissions From the Electric Power Sector Before and After the 2022 Reconciliation Act

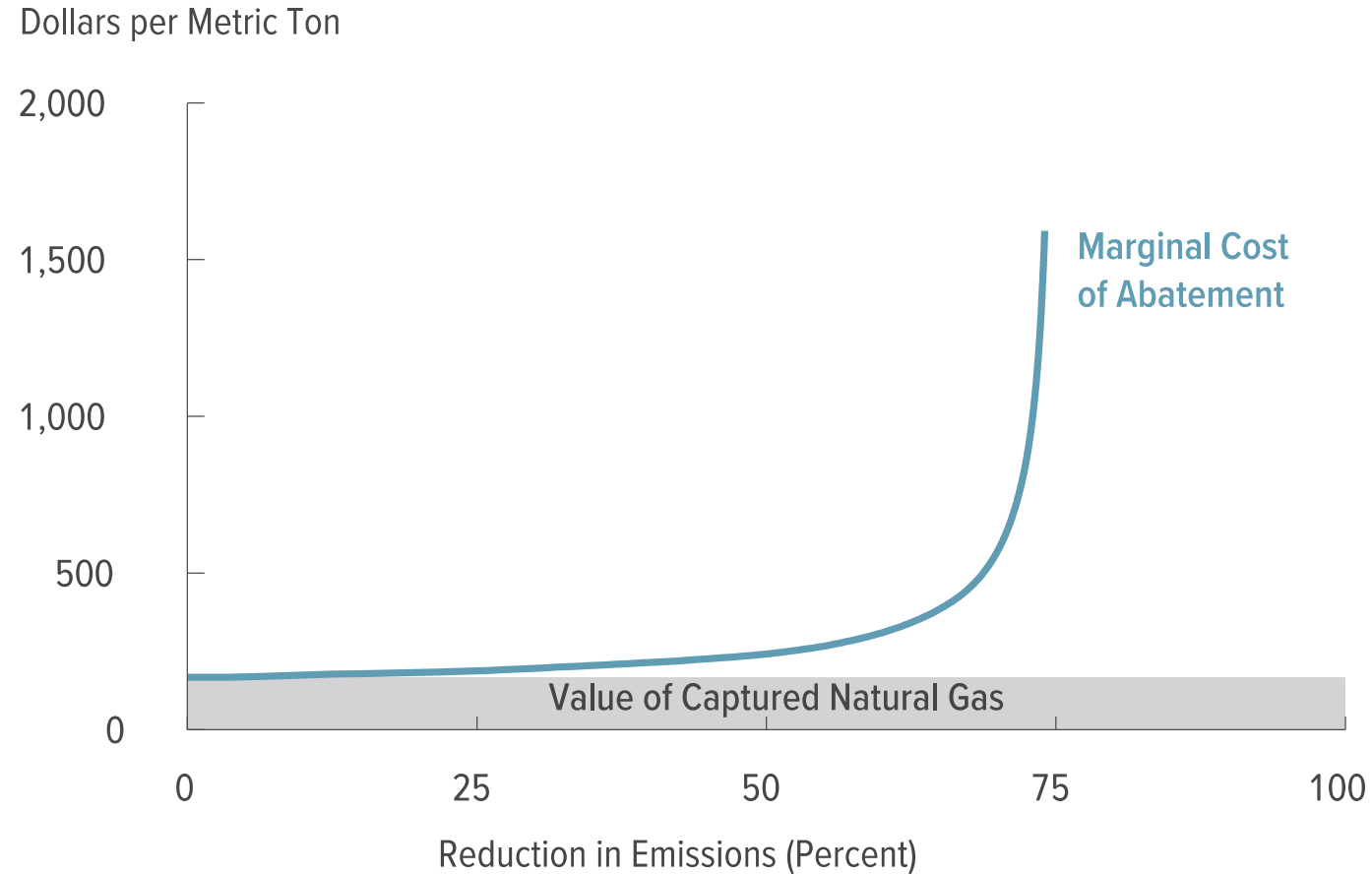
Billions of Metric Tons



Because of the act's incentives, energy-related emissions of carbon dioxide are projected to be 51 percent lower in 2032 than in CBO's previous projection.

Future emissions could be well above or below the projected trends, depending, for example, on the future cost of renewable energy generation and energy storage technology.

# An Estimate of the Marginal Cost of Abating Methane Emissions From Natural Gas Production



Charging for methane emissions affects the amount of emissions, the cost to produce natural gas, and the price of natural gas.

The increase in natural gas prices depends on how sensitive end users are to an increase compared with producers' sensitivity.

**Thank You**